

JACK J. GRYNBERG

IBLA 87-553; IBLA 87-813

Decided January 13, 1989

Appeals from decisions of the Eastern States Office, Bureau of Land Management, increasing annual rental rate for noncompetitive oil and gas leases ES-21654 and ES-21782.

Affirmed.

1. Oil and Gas Leases: Known Geologic Structure--Oil and Gas Leases: Rentals

Pursuant to 43 CFR 3103.2-2(d), BLM may properly require the holder of a noncompetitive oil and gas lease to pay an increased rental where, during the lease term, any part of the leased land is included within a known geologic structure.

2. Oil and Gas Leases: Known Geologic Structure--Oil and Gas Leases: Rentals

A determination that lands are within a known geologic structure of a producing oil or gas field, based in part on aeromagnetic data, will not be disturbed absent a showing of error by a preponderance of the evidence.

APPEARANCES: Jack J. Grynberg, Denver, Colorado, pro se.

OPINION BY ADMINISTRATIVE JUDGE ARNESS

Jack J. Grynberg has appealed from decisions of the Eastern States Office, Bureau of Land Management (BLM), dated May 5, 1987, and August 15, 1987, increasing the annual rental rate for noncompetitive oil and gas leases ES-21654 and ES-21782 respectively, because lands within the leases were located within a known geologic structure (KGS). 1/ The decisions stated:

1/ Regulation 43 CFR 3100.0-5(1) (1987) defines a KGS as "technically the trap in which an accumulation of oil or gas has been discovered by drilling and determined to be productive." Upon passage of the Federal Onshore Oil and Gas Leasing Reform Act of 1987, P.L. 100-203, 101 Stat. 1330-259, this concept was deleted from 30 U.S.C. § 226 (1982). Oil and gas lease applications and offers pending on Dec. 22, 1987, were, however, to be processed and leases issued under the provisions of the Act of Feb. 25, 1920, as in effect before its amendment by P.L. 100-203.

"Based on a recent review of deep tests in various counties in Michigan, all of the lands in the formerly established Goodwell-Norwich known geologic structure and in the Barton KGS in Newaygo County, Michigan, have been encompassed into the newly established Newaygo-Mecosta KGS, effective December 25, 1985." BLM stated that Grynberg's leases were affected by this determination, thereby increasing the annual rental to \$2 per acre or fraction thereof. 43 CFR 3103.2-2(d).

The record shows that the notices of increased rental were issued in reliance on a memorandum of January 17, 1986, from the Milwaukee District Manager, BLM, informing the Eastern States Director that the Newaygo-Mecosta KGS had been established effective December 25, 1985. Lands within this KGS totalled 363,260 acres, and included all the lands within lease ES-21654 and that portion of lease ES-21782 found in sec. 23, T. 13 N., R. 13 W. ^{2/} The memorandum explained that a review, occasioned by recent over-the-counter applications and successful tests of the Prairie du Chien formation, had revealed "that Prairie du Chien production is directly related to the geologic structure causing a very large negative magnetic anomaly."

The BLM KGS report also states that the Newaygo-Mecosta KGS includes lands within the Goodwell-Norwich and Barton KGS's, but that it is not an extension or combination of the previous KGS's. Instead, the Newaygo-Mecosta KGS is based on a new producing structure defined by new drilling to the Prairie du Chien and lower formations. The KGS report discusses factors leading to the KGS determination, including the geological environment of the Michigan basin, the stratigraphy of the region, magnetic data, significant features of the geologic history of the Mid-Michigan area, mapping standards, well-test and initial production data, and alternative data interpretations.

Grynberg appealed the decisions to classify the acreage in his leases as KGS, challenging the BLM KGS report. In his statement of reasons (SOR) for ES-21654 he contends that the only drilling within the township where this lease is located, T. 15 N., R. 12 W., is two dry holes in sec. 27. He states the nearest Prairie du Chien gas production is approximately 5 miles to the east of his lease in the newly discovered Reed City east field. He asserts that well data and seismic control are inadequate to determine KGS boundaries of this magnitude. He also questions BLM's use of "highly controversial methods," i.e., the use of "gravity and magnetic surveys" coupled with "the interpretation of plate tectonics" in making this KGS classification (Preliminary SOR IBLA 87-553 at 1-2).

^{2/} The BLM case file reveals, and BLM concedes on appeal, that part of lease ES-21782 was erroneously included in the KGS by the decision under review. None of sec. 10, T. 13 N., R. 13 W., Newaygo County, Michigan, was included in the KGS. The inclusion of portions of lease ES-21782 consisting of lands located in lots 4 and 5 of sec. 10, in the Newaygo-Mecosta KGS was error. Nonetheless, since the inclusion of any part of a lease in a KGS requires payment of increased rental pursuant to 43 CFR 3103.2-2d, we must examine the lands leased in their entirety to determine whether any part of the lease was properly included in the KGS.

Further, Grynberg points out that BLM is associating a magnetic low with a huge structural feature involving 363,260 acres. He contends there is no evidence that the magnetic low reflects a "basement high" as proposed by BLM. He argues "that the relationship of the magnetic low to Prairie du Chien production has not been established by the BLM and to do so is merely pure scientific speculation" (Supplemental SOR IBLA 87-553 at 2).

He questions the extent of the KGS, stating:

By using the BLM's own data, we conclude that the gas production is associated with a localized structural feature, much smaller than the proposed KGS area. Our interpretation leads us to believe that this production is associated with the magnetically positive ridge and not with the low as proposed by the BLM. (Emphasis in original).

(Supplemental SOR IBLA 87-553 at 3). Grynberg concludes that

[d]iscounting the influence of magnetics to production the regional structure on the Prairie du Chien shows only regional dip and an absence of a large 'structural' feature. * * * Ruling out the controversial magnetic control the BLM is left with only 3 wells besides the field to determine the boundaries of 363,260 acres.

(Supplemental SOR IBLA 87-553 at 4).

Grynberg sets forth these same arguments and general criticisms of BLM's interpretation of the geologic data in the KGS report in his SOR for ES-21782. In addition, he contends that the BLM report lacks adequate stratigraphic data to properly address stratigraphic variances in the Prairie du Chien Formation (SOR IBLA 87-813 at 3).

BLM responds that the Newaygo-Mecosta KGS is a large, deep-seated, hydrocarbon-bearing structure, which is associated with a basement high, and lies beneath portions of Newaygo, Mecosta, and several adjoining counties in west-central Michigan. The main production associated with the KGS at the time it was established was gas from the Ordovician Prairie du Chien Formation. In a discussion of the depth of this structure BLM states: "[A]ll known efforts to explain the PdC [Prairie du Chien] production were being developed utilizing the traditional structural model for the Michigan Basin, (i.e., a bowl shaped depression filled with sediments, and underlain by a basement with a featureless surface)."

However, based upon a geologic analysis of all available data in the Newaygo-Mecosta area, the Bureau concluded that the traditional structural model for the Michigan Basin was wrong. Rather, the Basin is two-tiered (i.e., a deeper section deformed by tectonic activity associated with the Mid-Michigan Rift is overlain by relatively undisturbed sediments which have masked the deeper section). Therefore, it is the Bureau's interpretation that the Prairie du Chien production and the shallower productions were structurally unrelated. Further, although the exact controlling mechanism

for each Prairie du Chien discovery is unknown, a corollary to the two-tier model was that any major structural features associated with the production could be delineated using well-control and aeromagnetic data, which was available to the Bureau (BLM Summarized Response to SOR IBLA 87-553, Jan. 29, 1988, at 2).

BLM concludes that based upon an analysis of the results of wells drilled in the Newaygo-Mecosta area to the date of this appeal, the KGS' boundaries remain viable. It asserts Grynberg has failed to offer data to show that the KGS was erroneously established or that it should be revised (BLM Summarized Response to SOR IBLA 87-553, Jan. 29, 1988, at 1-3).

BLM also submits a detailed response addressing each of Grynberg's arguments raised in both appeals. BLM explains the Newaygo-Mecosta KGS was based upon geologic analysis of data by a geologist who concluded that the land affected is underlain by a large trap which had been penetrated by Prairie du Chien gas wells. BLM indicates that the two dry holes referred to in sec. 27, T. 15 N., R. 12 W., are presumably the Thompson 1-27 and 1-27A, completed in late 1985, which were unavailable for review at the time of the KGS determination. BLM states, however, these same wells have had a gas and oil show within the Prairie du Chien, and subsequent review of data from both wells supports BLM's interpretation for this KGS (Detailed Response IBLA 87-553 at 1-2).

BLM asserts that Grynberg's challenge against its gravity and magnetic data does not establish the KGS report fails to define the Prairie du Chien structure. BLM explains:

Further, current Department of Interior policy is to use all available data when making such a determination. Plate tectonics is now considered a standard conceptual model which geologists use on a routine basis and aeromagnetic data is a readily accepted type of data which is used in conjunction with other sources of data to determine subsurface structures associated with the basement of a Basin.

(Detailed Response IBLA 87-553 at 3-4).

While admitting that the exact cause of the Newaygo-Mecosta magnetic anomaly has not been determined at this time, BLM rejects Grynberg's claim that the KGS report is based on "pure scientific speculation." BLM responds that the conclusions were based on professional judgment stating:

In a frontier area, it is standard practice to use Basin analogues (i.e., basins with similar structural settings) to determine probable size and distribution of oil and gas resources of a basin and its probable structure and stratigraphy. The deduction that the aeromagnetic anomaly 3/ in question is associated with a

3/ In Wilfred Plomis, 104 IBLA 34, 35 n.4 (1988), we quoted BLM's definition of a magnetic anomaly:

basement high, rather than a low, was due to its position in the Mid-Michigan Rift and the Geologic Report reflected the author's familiarity with rift basins. Specific rift basins the author was familiar with included the Mid-Continent Rift, the North Sea, the Red Sea, and the East African Rift.

(Detailed Response IBLA 87-553 at 5-6; 87-813 at 2-3). BLM asserts that the Newaygo-Mecosta KGS was the best reasonable estimate of the extent of the presumptively productive trap described by its analysis of all available data, and concludes that Newaygo-Mecosta is not a theory, but a KGS determination based on sound geologic analysis of all available geologic data and does not require change (Detailed Response IBLA 87-553 at 12; IBLA 87-813 at 14).

As to the need for more detailed stratigraphic information and analysis in the KGS report, BLM responds that

stratigraphic data includes formation tops which were used to construct the structure maps and isopach. Stratigraphic changes undoubtedly will be found to play a key role in determining the trap's local reservoir character. However, the appellant is apparently unaware of the fact that at the time of the KGS determination, a basic stratigraphic tool, the stratigraphic column for the deeper section was still the subject of a furious debate within the petroleum community. As additional stratigraphic information becomes available, it will be used in future KGS determinations.

(Detailed Response IBLA 87-813 at 6).

[1] When BLM has determined that any part of the lands described in a noncompetitive oil and gas lease is within an addition to a KGS, the lessee is required to pay an increased annual rental of \$2 per acre for the entire leasehold pursuant to 43 CFR 3103.2-2(d). Lewis & Clark Exploration Co., 97 IBLA 171 (1987); James D. Creighton, 87 IBLA 79 (1985), and cases cited therein.

[2] Grynberg does not argue with this regulatory requirement; rather he asserts that BLM improperly classified his oil and gas leases as part of the Newaygo-Mecosta KGS. An appellant challenging a Departmental interpretation that land is within a KGS has the burden of showing by a preponderance of the evidence that the determination is in error. Eileen Scully,

fn. 3 (continued)

"Aeromagnetic survey data are measurements of the distortion of the earth's magnetic field generated by its interactions with rock units of the earth's crust. Correction factors must be applied to the raw survey data to remove background magnetic trends (regional magnetic field, etc.) and other noise. The remaining pattern of magnetic highs and lows are magnetic anomalies."

104 IBLA 42 (1988); Bender v. Clark, 744 F.2d 1424 (10th Cir. 1984). Proof by a preponderance of the evidence is the traditional standard of proof required in a civil or administrative proceeding. Thunderbird Oil Corp., 91 IBLA 195 (1986), aff'd sub nom., Planet Corp. v. Hodel, CV No. 86-679 HB (D.N.M. May 6, 1987).

Grynberg's argument is that BLM has misinterpreted magnetic data to reflect a much larger and higher structure than actually exists. He questions BLM's methods and challenges the KGS report, concluding that BLM's theory is "speculative, theoretical and exploratory in nature" (Supplemental SOR at 4). These arguments fall short of the required showing by a preponderance of the evidence that the BLM determination is in error. This Board has recently examined and rejected similar arguments in Eileen Scully, supra. In Scully, which also involved the Newaygo-Mecosta KGS, we found the record supported BLM's position that production from shallower Devonian formations was structurally unrelated to Prairie du Chien production, stating:

BLM's position that a magnetic anomaly may reflect basement structure or topography is supported by the record. A similar conclusion attributed to L. L. Nettleton appears in the supporting documents of the KGS report:

With adequate magnetic surveys it is often possible to determine basement depths in sufficient detail for local structure on the basement surface to be reliably delineated. In addition to individual determinations of depth to the magnetic source this may involve modeling of an individual basement feature and determination of its major geometric parameters. If the geological deformation which caused the local basement feature, either originally or by rejuvenation, is later than the time of deposition of the overlying sediments, the basement disturbance may have caused deformation of those sediments which could be a major factor in oil accumulation.
[Footnote omitted.]

Id. at 46.

The Board has recently examined the Newaygo-Mecosta KGS and affirmed BLM, finding BLM's KGS determination to be supported by a complete and well documented report. Bruno D'Augustino, 106 IBLA 155 (1988); Robert E. Eckels, 104 IBLA 29 (1988); Wilfred Plomis, supra. In Plomis, we acknowledged that BLM made a number of assumptions in preparing its structural map of the Prairie du Chien formation. Making assumptions, however, is necessary where data is limited and does not, by itself, indicate error. Nevertheless, the Board may rely on reports of the Secretary's technical experts, "[w]here the conclusions drawn from geological data are subject to different interpretations, the Secretary is entitled to rely upon the reasoned opinion of his technical expert in the field." Wilfred Plomis, supra at 40, citing Champlin Petroleum Co., 86 IBLA 37, 40 (1985).

Grynberg has not shown that BLM's assumptions are erroneous. At best, he has raised the possibility that other conclusions are possible, such as that the magnetic anomaly may reflect either a high or a low. From our review of the record we find that each of appellant's arguments has been adequately addressed by BLM. On the record before us, Grynberg has failed to show by a preponderance of the evidence that there was error in BLM's KGS determination. Accordingly, we adhere to our ruling in recent cases concerning the Newaygo-Mecosta KGS, finding no reason to depart from the principles expressed therein.

Therefore, pursuant to the authority delegated to the Board of Land Appeals by the Secretary of the Interior, 43 CFR 4.1, the decisions of the Eastern States Office are affirmed.

Franklin D. Arness
Administrative Judge

I concur:

Bruce R. Harris
Administrative Judge

